In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) NMR-based method comprising generating a NMR spectrum of a mixture comprising at least (i) one hyperpolarised ligand, a target and optionally at least one further ligand, or (ii) a hyperpolarised target and at least one ligand and comparing said NMR spectrum with a reference spectrum of the at least one hyperpolarised ligand or the hyperpolarised target.

2. (Currently amended) The NMR-based method according to claim 1 comprising
   a) hyperpolarising at least one of said ~~a ligand~~ ligands or said ~~a target~~ targets,
   b) forming a mixture by contacting either ~~the~~ at least one hyperpolarised ligand with one of ~~a target~~ said targets ~~and~~or ~~a~~ with said target and at least one further ligand[,]; or the hyperpolarised target with at least one ligand,
   c) generating a NMR spectrum of the mixture, and
   d) comparing said NMR spectrum with a reference spectrum of the at least one hyperpolarised ligand or the hyperpolarised target.

3. (Previously presented) The method according to claim 1, wherein at least one of the ligands is selected from the group consisting of proteins, glycoproteins, lipoproteins, polypeptides, glyco-polypeptides, lipopolypeptides, peptides, carbohydrates, nucleic acids or a part, a fragment or a complex thereof and small organic molecules.

4. (Previously presented) The method according to claim 1, wherein at least one of the ligands is a small organic molecule of less than 2000 Da.

5. (Previously presented) The method according to claim 1, wherein more than one hyperpolarised ligand is used.

6. (Previously presented) The method according to claim 1, wherein the target is selected from the group consisting of proteins, glycoproteins, lipoproteins, nucleic acids, polypeptides, glycopolypeptides, lipopolypeptides, peptides or a part, a fragment or a complex thereof.

7. (Previously presented) The method according to claim 1, wherein the at least one hyperpolarised ligand or the hyperpolarised target is an isotopically enriched ligand or target.

8. (Previously presented) The method according to claim 1, wherein the at least one hyperpolarised ligand or the hyperpolarised target is selectively isotopically enriched at one or more sites in the molecule.

9. (Previously presented) The method according to claim 8 wherein the at least one hyperpolarised ligand or the hyperpolarised target is selectively isotopically enriched at one site in the molecule with ^{13}C or ^{15}N.

10. (Previously presented) The method according to claim 9 wherein the enrichment is a ^{13}C-enrichment.

11. (Previously presented) The method according to claim 1, wherein the NMR spectrum generated is a one-dimensional NMR spectrum

12. (Previously presented) The method according to claim 1, wherein the NMR spectrum generated is generated using low flip angles.

13. (Previously presented) The method according to claim 1, wherein the comparison with the reference spectrum shows a chemical shift difference, a relaxation time difference or a NOE effect difference.

14. (Currently amended) A method of performing an NMR-assisted drug ~~discover~~ discovery comprising the step of using one or more hyperpolarised ligands and/or hyperpolarised targets.

15. (Previously presented) A method of performing a ligand competition assay comprising the step of using one or more isotopically enriched hyperpolarised ligands.